CLAIMS

What is claimed is:

1. An objective lens to form beam spots of different sizes using corresponding first and second light beams of respectively different wavelengths, the objective lens comprising:

an inner region including an optical center of the objective lens;

a holographic region surrounding said inner region and comprising a plurality of concentric ring-shaped steps disposed on a lens surface of the objective lens; and

an outer region surrounding said holographic region,

wherein

said inner region transmits the first and second light beams,

said holographic region diffracts the second beam,

and the outer region transmits the first light beam.

2. The objective lens according to claim 1, wherein a first focal plane on which a first portion of the second light beam incident on said holographic region is focused coincides with a second focal plane on which a second portion of the second light beam incident on said inner region is focused.

3. The objective lens according to claim 1, wherein said holographic region further comprises grooves to diffract the second light beam.

4. An objective lens for an optical pickup, the objective lens comprising:

a holographic region having a plurality of concentric ring-shaped steps formed on a lens surface of the objective lens,

wherein the objective lens has a wavelength dependence such that two light beams having corresponding different wavelengths and an identical diffractive order form appropriate different wavefronts corresponding to reproducing and/or recording information from and/or to corresponding two kinds of optical recording media having respectively different thickness.

5. The objective lens according to claim 4, further comprising an inner region surrounded by said holographic region, wherein a first focal plane on which a first portion of the second light beam incident on said holographic region is focused coincides with a second focal plane on which a second portion of the second light beam incident on said inner region is focused.

6. The objective lens according to claim 4, wherein said holographic region includes grooves to diffract the light beam.

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